OSVATH AFFIDAVIT

APOSTILLE

(Convention de La Haye du 5 octobre 1961)

1. Country : Sweden

This public document

2. has been signed by Helén Kinnman

3. acting in the capacity of Notary Public

4. bears the seal/stamp of Notary Public in Lund

Certified

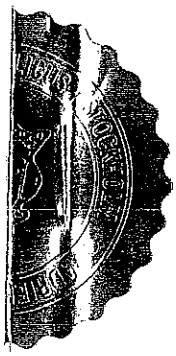
5. at Stockholm **6. the** 2013-11-22

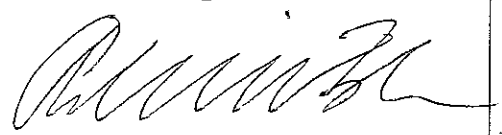
7. by Adrienne Bonde

Deputy Notary Public

8. No 5499

9. Seal/stamp: **10. Signature:**





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STATE OF NEW YORK
SUPREME COURT COUNTY OF NIAGARA

In the Matter of a Proceeding under Article 70 of the CPLR for a Writ of Habeas Corpus, THE NONHUMAN RIGHTS PROJECT, INC., on behalf of KIKO, Petitioners, v. CARMEN PRESTI, individually and as an officer and director of The Primate Sanctuary, Inc., CHRISTIE E. PRESTI, individually and as an officer and director of The Primate Sanctuary, Inc., and THE PRIMATE SANCTUARY, INC., Respondents.	**AFFIDAVIT OF MATHIAS OSVATH** Index No.:

COUNTRY OF SWEDEN)
)
PROVINCE OF Skåne) ss:
)
MUNICIPALITY OF Lund)

Mathias Osvath being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is Mathias Osvath. I received a PhD in Cognitive Science, with specialization in Cognitive Zoology from Lund University in 2010.

2. I submit this affidavit in support of Petitioners The Nonhuman Rights Project, Inc. ("NhRP"), on behalf of Kiko, for a writ of habeas corpus. I am a non-party to this proceeding.

3. I am a Cognitive Zoologist at Lund University in Sweden, a research fellow in the Department of Cognitive Science at Lund, and leader of the Cognitive Zoology Group at Lund. I am the scientific director of two research facilities for the study of animal cognition: Lund University Primate Research Station, and Lund University Corvid Cognition Station. I

am currently the main supervisor of two PhD-students in Cognitive Zoology. I am, and have been, teaching courses on graduate and post-graduate levels in Comparative Cognition, Animal Behaviour, Ethology, Methods in Cognitive Science, Neurocognition (mainly in different departments at Lund University, and at the Swedish University of Agricultural Sciences).

4. Apart from my work at Lund University I collaborate on different projects on animal cognition with colleagues at Oxford University, the Max Planck Institute and the University of Vienna.

5. I have been selected as one of 10 excellent young researchers of Lund University (the largest university in Northern Europe). The Swedish head of State, King Carl Gustav XVI, made an official visit to the primate research station I founded (and direct) to highlight its importance in Swedish cognitive research. I have received funding from several prestigious foundations including The Swedish Research Council, the Crafoord Foundation, in which I received the largest grant award in the Foundation's history for a regular science project, and The Royal Swedish Academy of Sciences.

6. I serve on various boards and groups at Lund concerned with the ethical treatment of animals in research. I have been on the faculty steering committee for the animal research facilities since 2007. I am often asked for advice and opinions by the Swedish Agricultural Board (which implements legislation on animal research). I have been a member of the research committee for the Swedish Zoo Association since 2009. I have sat on the board of the Jane Goodall Institute in Sweden since 2009. I am on the advisory board of Lund University's Institute for Advanced Studies. I sit on the editorial board of three international scientific journals: *Frontiers in Comparative Psychology, International Journal of Comparative Psychology* and *Animal Behavior and Cognition*.

7. I specialize in complex cognition, specifically mental representation and planning abilities, of great apes and corvids (crows). I have studied great apes in captivity with

controlled experiments and observations since 2004. I have worked with corvids both in captivity and in the wild since 2007. To my knowledge I am the only scientist who has created a research method for comparing distantly related, but cognitively similar, species (apes and corvids) in order to understand the principles of complex cognition.

8. I have written 16 peer-reviewed scientific papers and book chapters (and 17 conference abstracts). I am the sole or the first author for a majority of these. Two of my papers (published in *Current Biology* and *Animal Cognition*) are among the most highly cited papers in the animal behavior field (in the 98th and 99th percentile of citations since published). One of my findings on chimpanzee planning abilities was selected by *Discover Magazine* as one of the scientific breakthroughs of the year 2009 (and appeared at a similar list in *New Scientist*). I am routinely invited to contribute to special issues in various journals including *Philosophical Transactions of the Royal Society B*.

9. I regularly give talks in scientific contexts and for the public. I am often an invited speaker to national and international academic departments and conferences. Apart from Sweden, I have given talks (often several times in each country) in Denmark, Germany, Austria, Czech Republic, France, UK, USA and Japan. My research has made international headlines on the front pages of newspapers like The Guardian and Le Figaro. The news section of *Science* has twice reported on my findings. I have twice given interviews to North America's largest radio show on science, "Quarks and Quirks." In Sweden, my research has been the focus of several prime-time radio and TV documentaries. My scientific discoveries on great ape planning were the most covered (widely written about) news to come out of Sweden in 2009 and my findings became the largest international news from Sweden that year. I have also collaborated with Animal Planet and the BBC on documentaries on animal cognition and behavior.

Basis for Opinions

10. The opinions I state in this Affidavit are based on my scientific knowledge about chimpanzee cognition. In particular it is based on my expertise in great ape abilities to foresee potential future states, which is an area where I am regarded as among those with the foremost knowledge. A full reference list of peer-reviewed literature cited herein is annexed hereto as **"Exhibit A"**.

Opinions

11. Chimpanzees are, together with bonobos, our closest living relatives (Goodman, 1999) and, as such, we share an abundance of characteristics. We are not only similar in appearance and physiology but also in our emotions and our cognition. Each year the list of uniquely human cognitive abilities dwindles as we learn more about chimpanzees and other great apes. Many of the traits we consider to be characteristic of humans are those which define someone as an autonomous being or person. Likewise, chimpanzees and other great apes, share these capacities associated with autonomy. I will here focus on one major class of those key characteristics of autonomy which my colleagues and I have been studying in great apes for the last seven years: the ability to plan and remember from a first person perspective.

12. When we humans recollect a specific event or plan for a new situation, we use perceptual simulations, which enables us to experience these events mentally, i.e., with our "inner eyes and ears". One can think of this ability as mental time travel. This skill is enabled through the episodic system, that is, memories for autobiographical events and foresights for personal situations, (Tulving, 1985). Tulving identified what he called *autonoetic consciousness* (which roughly means self-knowing consciousness) as a necessary correlate of the episodic system (Tulving, 1985). Put simply, without the understanding that you are an individual who exists through time you would not be able to recollect past events in your life and plan future events. Autonoetic consciousness gives an individual of any species an

autobiographical sense of a self with a future and a past. Chimpanzees and other great apes clearly possess an autobiographical self, as they are able to prepare themselves for future actions (e.g., tool use), even as much as a day in advance (Beran et al., 1999, 2004, 2012; Beran and Evans, 2009, 2012; Mulcahy and Call, 2006; Osvath and Osvath, 2008) and demonstrate a capacity for episodic memory. They can remember highly specific contextual elements, that is, the "what, where and when" of events when hours, weeks and even years have passed (Martin-Ordas et al., 2010; 2013).

13. In 2009, I published an observational study of one male chimpanzee in a zoo who prepared for future stone throwing at visitors (Osvath, 2009). The key findings in this study were that the chimpanzee collected and stockpiled stones at strategic places in his compound when he appeared completely calm, but when he used them later he was in an agitated state. The ability to plan for events where you are in a different psychological state from the current situation is regarded as a strong sign of an episodic system (e.g. Suddendorf and Corballis, 2007). In 2012 we conducted a follow-up study in order to get a more detailed understanding of the planning behaviour of this chimpanzee (Osvath and Karvonen, 2012). We found very complex behaviours not documented before. The chimpanzee engaged in deception for the future by constructing hides for his stone caches and by inhibiting his aggressive displays (which are tell-tale signs of upcoming throws). The key finding was that chimpanzees are not only able to prepare for an upcoming event, but are also able to mentally construct a new situation which will alter the future (in this case the behaviours of human zoo visitors).

14. Part of being an autonomous individual is self-control. Chimpanzees, like humans, can delay gratification for a future reward; they possess a high level of self-control under many circumstances (Osvath and Osvath, 2008). Self-control depends upon the episodic system. Basically, the perceptual simulations made possible by episodic memory function as a motivational "brake" on current drives in favour of delayed rewards (Boyer, 2008). The sensory

simulation evokes a motivation related to the simulated episode. This motivation competes with whatever other motivations were prior to the simulation. This brings the future into the present: for example, a choice between immediate and delayed satisfaction becomes a choice between two current motivations. It is a trick of the brain allowing for delay of gratification only available to humans and nonhumans with a sufficiently sophisticated sense of self and autobiographical memory. In a series of experiments we demonstrated that chimpanzees can disregard an immediate small piece of food in favour of a tool that would allow them to get a larger piece of food in the future. Chimpanzees can even select a tool which they had never seen before, but which function they could guess, and use it in the future on a reward apparatus. This ability to perceive the function of a novel tool in the future would be impossible without mentally representing the details of the future event (Osvath and Osvath, 2008). We have also shown that chimpanzees plan for future exchanges with humans (Osvath and Persson, 2013). Finally, chimpanzees will even use self-distraction (playing with toys) to cope with the impulse of grabbing immediate candies instead of waiting for more (Evans and Beran, 2007). In summary, chimpanzees can delay a strong current drive for a better future reward, generalize a novel tool for future use, select objects for a much-delayed future task, and do all of this while keeping in mind several different elements of a situation.

15. In addition to the behavioural studies there are also neurobiological findings showing that the chimpanzee brain is activated in the same areas and networks as the human brain during activities associated with planning and episodic memory (Rilling et al, 2007). These findings support the behavorial and cognitive evidence for an autobiographical self in both humans and chimpanzees.

16. When taken together, these studies, as well as other reports on chimpanzee behaviour in the wild, leave little doubt that chimpanzees possess an episodic system similar to humans. Chimpanzees have a self-concept and are aware of their personal past and see a

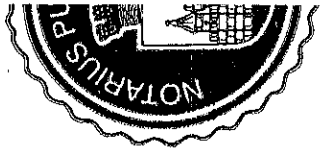
personal future ahead of them. This also means that they can re-experience past pains and pleasures as well as anticipate such emotions. This in turn implies that they likely can, just as humans, be in pain over an anticipated future event that has yet to occur. For instance, confining someone in a prison or cage for a set time, or for life, would lose much of its power as punishment if that individual had no self-concept. Every moment would be a new moment with no conscious relation to the next. But, chimpanzees and other great apes have a concept of their personal past and future and therefore suffer the pain of not being able to fulfill one's goals or move around as one wants; like humans they experience the pain of anticipating a never-ending situation.

Mathias Osvath

Declared
~~Sworn~~ before me
nd, Sweden, this 19th day of November, 2013
officio

Notary Public
Helén Kinnman

Dno 1730/13
Fee SEK 270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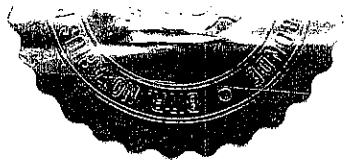

EXHIBIT A

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